

**A REVIEW ON THE BEST WAY TO PRODUCE BIODIESEL FROM OIL PALM
WASTES**

NASEEM FARIHA BINTI BADARUDIN

**Final Year Project Submitted In Partial Requirements For The Award Of Degree Of
Bachelor Of Science (Hons.) Plantation Management And Technology In Faculty
Of Plantation And Agrotechnology**

University Technology Mara

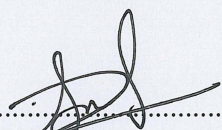
JULY 2016

DECLARATION

This Final Year Project is a partial fulfilment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

It is entirely my own work and has not been submitted to any other University or higher education institution, or for any other academic award in this University. Where use has been made of the work of other people it has been fully acknowledged and fully referenced.

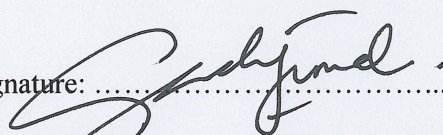
I hereby assign all and every rights in the copyright to this Work to the Universiti Teknologi MARA ("UiTM"), which henceforth shall be the owner of copyright in this Work and that, any reproduction or use in any form or by any means whatsoever is prohibited without a written consent of UiTM.

Candidate's signature : 

Date: 20.7.2016

Name: NASEEM FARIHA BT. BADARUDIN

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

Signature: 

Name of Supervisor: SITI SARAH JUMALI
PENSYARAH

Position: **Fakulti Perladangan dan Agroteknologi**
Universiti Teknologi MARA (Melaka)
Kampus Jasin, 77300 Merlimau
Melaka

Date: 20/7/2016

ACKNOWLEDGEMENT

Bismillahirrahmanirrahim,

First of all I am very thankful to Allah who is most beneficent and merciful. This Final Year Project entitled A Review On The Best Way To Produce Biodiesel From Oil Palm Waste has been completed due to the support from many people either direct or indirectly and I wish to acknowledge them here.

My deepest thanks to Madam Siti Sarah Binti Jumali as my supervisor for her endless support, understanding, give a guide, advice and for her keen interest on me at every stage of my research until the full report written.

Lastly, I would like to express my gratitude to my family for their love and encouragement. I have received so much personal support from family and friends.

TABLE OF CONTENT

	<u>Pages</u>
DECLARATION	i
ACKNOWLEDGEMENT	ii
TABLE OF CONTENT	iii-iv
LIST OF FIGURES	v
LIST OF TABLES	vi
LIST OF ABBREVIATIONS	vii
ABSTRACT	viii
ABSTRAK	ix

1. INTRODUCTION

1.1 Malaysia oil palm industry.....	1
1.2 Problem occurs regarding fossil fuels and the objectives of this review paper.....	2
1.3 Alternative fuel to fossil fuel.....	3
1.4 Overview of biodiesel.....	4

2. PALM OIL INDUSTRY

2.1 Background of oil palm and palm oil.....	5-6
2.2 Palm oil production process.....	6-8
2.3 Waste from palm oil production.....	8-9
2.4 Current disposal and utilization method of waste.....	10-12
2.5 Barriers in utilization of oil palm waste.....	13-15

3. BIODIESEL PRODUCTION FROM PALM OIL WASTE

3.1 Potential use of biodiesel from oil palm waste sources.....	16-17
3.2 Liquid processing technologies (POME).....	17-18
3.2.1 Transesterification.....	18-21
3.2.2 Catalytic cracking.....	21-23

ABSTRACT

A REVIEW ON THE BEST WAY TO PRODUCE BIODIESEL FROM OIL PALM WASTES

Oil palm parts and palm oil waste have been used as a source of biofuel like biodiesel. Rapid growth of oil palm industry and the method to utilize the parts and waste of oil palm have become a problem to the large amount of waste has been produced by mill daily and only certain types of waste have been reused. Biodiesel that has been produced from the waste has similar properties as fossil fuel that can be directly used as a fuel. There are many technologies that are available for processing biodiesel from oil palm. This review gives an overview about the best process that available for processing the oil palm wastes into biodiesel and the sources from oil palm wastes that available for biodiesel production. Different process gives different production cost and different result in biofuel yield. Biofuel can give many advantages to the environment and Malaysia economy. Malaysians should be aware of the benefit of using biofuel and government should commercialize and introduce more about biofuel to automobile industry. With all the information gathered during this review, the best method for producing high yield biodiesel and the best part of oil palm waste that can produce high yield are identified.